

CMOS LOW-NOISE MR READ HEAD PRE-AMPLIFIER CIRCUIT

ABSTRACT

A preamplifier system is provided for use with a magneto-resistive (MR) sensor. Included is an alternating current (AC) coupling module connected to the MR sensor for blocking a direct current (DC) voltage associated with an input signal, and filtering low frequency noise associated with the input signal. Also provided is a gain stage module coupled to the AC coupling module. The gain stage module includes a plurality of cascode field effect transistors (FETs) configured for amplifying the input signal, while reducing intrinsic noise and increasing operational bandwidth. Coupled to the gain stage module is a control circuit for feeding back an output of the gain stage module for bias regulation and disturbance rejection.